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NOTES ON GRASSES.

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DURING the study of the grasses of the northeastern United States it has been found necessary to describe a few new species and varieties, and to change the names of other forms to agree with the recent International Rules of Botanical Nomenclature. Some new combinations are due to changes in the rank of groups, investigation having shown that forms supposed to be varieties must be recognized as species, or the reverse. The new names and descriptions are given below.

Andropogon scoparius var. **littoralis** (Nash), comb. nov.

A. littoralis Nash, 1901. Britt. Man. 69.

Sand dunes along the coast, N. Y. and southward.

Paspalum psammophilum Nash MSS.

P. prostratum Nash, 1901. Britt. Man. 74, not Scribn. & Merr. Jan. 1901; earlier than Britton's Manual.

Sandy soil, So. N. Y. to Del.

Paspalum laeve var. **australe** Nash MSS.

P. australe Nash, 1901. Britt. Man. 1039.

Va. to Fla. and Miss.

Axonopus furcatus (Flügge), comb. nov.

Paspalus furcatus Flügge 1810. Mon. Pasp. 114.

Paspalum Elliottii Wats. 1890. Gray, Man. Ed. 6, 629.

Panicum gravius Hitchc. & Chase, sp. nov.

Culms in large tufts, slender, 50–80 cm. high, erect or spreading at the summit, sheaths glabrous except a puberulent ring at the summit, the lower usually softly pubescent; ligule a ring of hairs 0.3 mm. long; blades spreading, 6–10 cm. long, 6–10 mm. wide, (the lower shorter), acuminate, rounded at the base, glabrous, the lower rarely

puberulent; panicle long, exserted, 6–11 cm. long, as wide or wider, the slender flexuous branches fascicled, the lower spreading or drooping at maturity, spikelet-bearing at the ends; spikelets oval, 2 mm. long, glabrous, first glume $\frac{1}{4}$ – $\frac{1}{3}$ as long as the spikelet, acute, 1-nerved, second glume and sterile lemma 5–7 nerved, equal, covering the fruit at maturity; fruit elliptic, 1×1.8 mm., obscurely apiculate. Autumnal state diffusely branched, forming very large top-heavy reclining bunches, the slender branches recurved, the numerous flat blades horizontally spreading.

In the simple state this species resembles large specimens of *P. dichotomum* L., to which it is most nearly allied, but it is distinguished in that state by wider blades, larger panicle with more drooping branches and by equal second glume and sterile lemma (rather more strongly nerved than in *P. dichotomum*), which cover the fruit at maturity. In *P. dichotomum* the second glume is shorter and exposes the fruit. In autumnal state *P. gravius* is readily distinguished by the habit.

Rocky or dry woods and hillsides, Connecticut to Michigan, south to Georgia, Mississippi and Arkansas.

Type *Chase 3620*; forming top-heavy tufts, in sandy, rather dry woods, on the old Commons farm, between Centreville and Mt. Cuba, Delaware, July 30, 1906; collected by Agnes Chase. Deposited in National Herbarium.

Distribution: CONNECTICUT: Meriden, *Bissell 5579*. MICHIGAN: Port Huron, *Dodge* in 1899; Michigan Agricultural College, *Wheeler* in 1900. PENNSYLVANIA: Easton, *Porter* in 1895. DELAWARE: Mt. Cuba, *Commons 296*, *Chase 3620*. MARYLAND: Riverdale, *Chase 3643*. DISTRICT OF COLUMBIA: Washington, *Hitchcock 18* and *257*. VIRGINIA: Marion, *Small* in 1892. NORTH CAROLINA: Biltmore, *Biltmore Herb. 800a*. GEORGIA: Stone Mountain, *Hitchcock 183*. MISSOURI: Monteer, *Bush 2877*. ARKANSAS: Fulton, *Bush 2532*. MISSISSIPPI: Saratoga, *Tracy 8403*.

Panicum praecocius Hitchc. & Chase, sp. nov.

Culms tufted, 15 to 25 cm. high in the simple state, early branching and elongating, sometimes to 30–45 cm., at first erect, soon becoming geniculate and spreading, very slender, wiry, abundantly pilose with weak spreading hairs 3–4 mm. long; sheaths, even the lowest, much shorter than the very long internodes, those of the branches usually but 1–2 cm. long, pilose like the culm, more prominently papillose; blades rather firm, erect or ascending, 5–8 cm. long, 4–6 mm. wide, those of the branches as large as the primary leaves, linear-oblong, often somewhat involute toward the acuminate apex, scarcely nar-

rowed toward the base, long-pilose on both surfaces, the hairs of the upper surface 4–5 mm. long, erect from the plane of the blade; ligule 3–4 mm. long; primary panicles at first usually overtopped by the upper leaf, but at or past maturity exerted, ovate or rhombic in outline, 4–6 cm. long, nearly as wide, loosely flowered, the axis pilose, branches flexuous, spreading or ascending; the secondary panicles smaller, numerous, overtopped by the leaves; spikelets 1×1.8 – 1.9 mm., obovate and turgid at maturity, obtuse, pilose with weak spreading hairs, first glume $\frac{1}{3}$ – $\frac{1}{2}$ the length of the spikelet, triangular, 1-nerved; second and third subequal, 7-nerved, the second slightly shorter than the fruit at maturity; fruit 1×1.6 mm., broad-elliptic. Winter leaves lanceolate, long pilose.

This species scarcely has a simple state, the branches appearing often before the first panicle is expanded. Distinguished from *P. lanuginosum* by the early branching, the usually shorter culms, the firmer, narrow, long-pilose blades, the smaller, fewer-flowered panicles, and more turgid, longer-pilose spikelets.

Dry prairies and clearings, Michigan to Oklahoma and Texas.

Type *V. H. Chase 649*; dry bank, near Wady Petra, Stark County, Illinois, June 30, 1900, collected by Virginius H. Chase.

Distribution: MICHIGAN: Michigan Agricultural College, *Wheeler 18* in 1900. WISCONSIN: Lauderdale, *R. Bebb 1000*. ILLINOIS: Joliet, *Skeels 252*; Wady Petra, *V. H. Chase, 472* and *649*. MISSOURI: Howell County, *Bush 54*; Monteer, *Bush 743* and *748*. KANSAS: Manhattan, *Kellerman 20*; *Carleton* in 1892. OKLAHOMA TERRITORY: Stillwater, *Hitchcock* in 1903. TEXAS: Waller County, *Thurrow 5* in 1898.

***Panicum lanuginosum* var. *siccanum* Hitchc. & Chase, var. nov.**

Plants smaller than typical *P. lanuginosum*, of similar habit, the culms appressed-pilose, the sheaths less stiffly pilose than in the species, blades usually somewhat firmer, the upper surface glabrous or with a few scattered long hairs, mostly near the base, lower surface pubescent; ligule shorter (1 mm. long); panicle more open, fewer-flowered, usually smaller; spikelets 1×1.7 mm., more rounded and turgid than those of the species, the pubescence shorter. Much like smoother forms of the species and distinguished only by the characters given.

Dry sand, Massachusetts to North Carolina, west to Kansas.

Type *Chase 1602*, Dry, hot sand of sandstone cliff, Starved Rock, Ill.

Distribution: MASSACHUSETTS: West Quincy, *Churchill* in 1891; Wellesley, *Smith 735*. CONNECTICUT: Montville, *Graves 328*; Lyme,

Graves 329. ONTARIO: Gault, *Herriot 61.* INDIANA: Miller, *Chase 1552.* WISCONSIN: Trempleau, *Pammel* in 1887. ILLINOIS: Starved Rock, *Chase 1602, 1603* and *1604.* KANSAS: Manhattan, *Kellerman* in 1888. PENNSYLVANIA: Germantown, *Stone 13.* DISTRICT OF COLUMBIA: Zoological Park, *Pollard 523.* NORTH CAROLINA: Biltmore, *Biltmore Herbarium 698b.*

Panicum lanuginosum* var. *huachucae (Ashe), comb. nov.

P. huachucae Ashe 1898. Journ. Elisha Mitch. Soc. **15**: 51.

Me. to Minn. and southward.

Panicum oricola Hitchc. & Chase, sp. nov.

Plants grayish, often purplish; culms densely tufted, 10–30 cm. long, spreading, soon becoming branched and prostrate, densely appressed or ascending pilose, the hairs on the nodes spreading; sheaths usually more than half the length of the internodes, overlapping on the branches appressed-pilose; blades firm, erect or ascending, 2–5 cm. long, 2–4 mm. wide, broadest near the base, acuminate; upper surface pilose with hairs 3–5 mm. long, sparse on the later leaves; lower surface appressed-pubescent mixed with longer hairs; ligule a dense ring of hairs 1–1.5 mm. long; primary panicle short exserted, or rarely long-exserted early in the season, ovate in outline, 1.8–3 cm. long, rarely longer, 1–2 cm. wide, rather densely flowered, the axis appressed-pubescent, branches fascicled, flexuous, ascending or spreading; spikelets 1×1.5 mm. broadly obovate, obtuse, pubescent with short spreading hairs, first glume $\frac{1}{3}$ to $\frac{1}{2}$ the length of the spikelet, abruptly pointed, strongly 1-nerved, second and third equal and just equaling the fruit at maturity, obtuse, 7–9 nerved; fruit 0.9×1.3 mm., broadly elliptic, very turgid, obscurely pointed. In autumnal state the plants are prostrate, forming mats, with short fascicled branches at all the nodes; leaves and panicles not greatly reduced, the latter overtopped by the leaves, which are less pilose than are the earlier ones; winter leaves lanceolate, sparsely pilose above.

Distinguished by the decumbent or prostrate habit, appressed-pilose culms and sheaths, and the small panicles of rounded spikelets, large in proportion to the size of the panicle.

Sand barrens along the coast, Massachusetts to Virginia.

Type *Hitchcock 47* in National Herbarium. Prostrate clumps on bare sand on low mounds between marsh and sand dune. Lewes, Del. June 18, 1905, collected by A. S. Hitchcock.

Distribution: MASSACHUSETTS: Nantucket, *Hitchcock* in 1902. NEW YORK: Long Island, *Young* in 1871. NEW JERSEY: Absecum, *Commons 45*; The Plains, *Stone* in 1901. DELAWARE: Lewes, *Hitchcock 47*; Rehoboth, *Commons 59*. VIRGINIA: Cape Henry, *Hitchcock 64*; *Chase 2339*.

Panicum unciphyllum var. **thinium** Hitchc. & Chase, var. nov.

Differs from *P. unciphyllum* as follows: Culms shorter, not over 30 cm. high, in larger tufts, pubescence denser and longer; early becoming profusely branched and widely spreading, the small erect blades with scattered long stiff hairs on the upper surface; spikelets slightly smaller, 1.3–1.4 mm. long, very turgid, obtuse.

Dry sands, New Jersey.

Type *Chase 3577* in National Herbarium. In mats, sandy, open ground, Tom's River, N. J. July 28, 1906; collected by Agnes Chase.

Distribution: Atsion, *Chase 3562*; Tom's River, *3576* and *3577*; Forked River, *3581*.

This form seems to be included in the description of *P. psammophilum* Nash (Bull. Torr. Bot. Cl. **26**: 576. Nov. 1899, not Welw. July, 1899) but the type, *Clute 175* in N. Y. B. G. herbarium, is *P. unciphyllum* Trin. (*P. columbianum* Scribn.)

P. patulum (Scribn. & Merr.), comb. nov.

P. Nashianum patulum Scribn. & Merr. 1900. U. S. D. A. Div. Agrost. Circ. **27**: 9.

S. E. Va. to Fla., near the coast.

Panicum aculeatum Hitchc. & Chase, sp. nov.

In very large clumps, culms slender, 0.7–1 m. high, ascending, scabrous, harshly pubescent below; sheaths papillose-hispid with stiff sharp-pointed hairs, a puberulent ring at the summit, uppermost usually glabrous; ligule minute, membranaceous, ciliate; blades firm, stiffly ascending or spreading, 12–20 cm. long, linear-lanceolate, acuminate, involute-pointed, very scabrous on the upper surface and toward the apex beneath, paler on the under surface; panicle rhombic in outline, 8–12 cm. long, about as wide, few-flowered, the slender, flexuous, fascicled branches ascending or spreading, naked at the base, scabrous, sometimes with a few viscid spots; spikelets 3 mm. long, elliptical, minutely pubescent, first glume $\frac{1}{4}$ to $\frac{1}{3}$ as long as the spikelet, 1-nerved, acute, second glume and sterile lemma 9–11 nerved, abruptly acute, slightly exceeding the fruit; fruit elliptic, 1.3×2.7 mm., minutely umbonate. Autumnal state, branching from the middle nodes, the branches more or less divaricate, not much crowded.

Allied to *P. scabriusculum* Ell.; panicle smaller, more open, fewer-flowered, axis and branches scarcely viscid, spikelets larger, the glumes only slightly exceeding the fruit.

Type *Chase 2520* in National Herbarium. In large clump by small slough, border of woods, Takoma Park, D. C., July 27, 1904; collected by Agnes Chase.

Distribution: DISTRICT OF COLUMBIA: Takoma Park, *Chase 2520*;

Hitchcock & Chase 94; *House* 1041. NORTH CAROLINA: Lake Mattamuskeet, Chase 3210.

The name refers to the aculeate hairs on the lower sheaths.

Setaria imberbis var. **perennis** (Hall), comb. nov.

S. perennis Hall. 1893. Trans. Kan. Acad. Sci. **13**: 102.

Chaetochloa versicolor Bickn.

Brackish marshes along the coast, Ct. to Fla. and in saline soil, Kan. and Ind. Terr.

S. viridis var. **brevisetata** (Doell.), comb. nov. †

Panicum viride brevisetatum Doell, 1857. Bad. Fl. **1**: 234.

A form with bristles scarcely longer than the spikelets; Maine, *Fernald*.

Zizania aquatica var. **angustifolia**, var. nov.

Culms about 1 m. high, leaves narrower than in the species (less than 1 cm. wide), pistillate portion of panicle appressed.—Me. to Minn. and northw. Type from Belgrade, Me., *Scribner*, Aug. 1895.

Oryzopsis racemosa (J. E. Smith) Ricker MSS. comb. nov.

Milium racemosum J. E. Smith, 1813. Rees, Encycl. 23: 15.

Oryzopsis melanocarpum Muhl. 1817. Gram. 79.

Rocky woods, Ont. and Vt. to Minn. southw. to Del. and Ia.

Calamagrostis Pickeringii var. **lacustris** (Kearney), comb. nov.

C. breviseta lacustris Kearney, 1898. U. S. D. A. Div. Agrost. Bul. **11**: 25.

Moist ground, Mts. of N. Eng. and along the Great Lakes to Minn.

Spartina patens var. **juncea** (Michx.), comb. nov.

Trachynotia juncea Michx. 1803. Fl. Bor. Am. **1**: 64.

Spartina juncea Willd. 1809. Enum. 81.

Salt marshes and sandy beaches along the coast, N. H. to Fla. and Tex.

Spartina patens var. **caespitosa** (A. A. Eaton), comb. nov.

S. caespitosa A. A. Eaton, 1898. Bul. Torr. Bot. Cl. **25**: 338.

Borders of brackish marshes, N. H. and Mass.

Ctenium aromaticum (Walt.), comb. nov.

Aegilops aromatica Walt. 788. Fl. Car. 225.

Ctenium americanum Spreng. 1825. Syst. **1**: 274.

Wet pine barrens, Va. and southw.

Tridens flava (L.), comb. nov.

Poa flava L. 1753. Sp. Pl. 68.

Triodea seslerioides (Michx.) Benth. 1883. Vasey, Cat. Grass. U. S. 35.

Triodea cuprea Jacq. 1813. Eclog. Gram. 21.

Dry or sandy fields, Ct. to Mo. and southw.

Melica striata (Michx.), comb. nov.

Avena striata Michx. 1803. Fl. Bor. Am. 1:73.

Rocky wooded hills, Gaspé to Pa., Minn., and westw.

Glyceria Torreyana (Spreng.), comb. nov.

Poa Torreyana Spreng. 1821. N. Entd. 2: 104.

Glyceria elongata (Torr.) Trin. 1836. Gram. Suppl. 58.

Poa elongata Torr. 1821. Spreng. N. Entd. 2: 104, as syn. under *P. Torreyana*.

Glyceria pallida var. **Fernaldii**, var. nov.

Culms very slender, usually geniculate and spreading, 2–4 dm. high, leaves 4–8 cm. long, 2–3 mm. wide, panicles 5–7 cm. long, the fascicled branches lax, flexuous; spikelets 3–5 flowered, 4–5 mm. long; glumes and lemmas obtuse, usually erose at the summit. Flowering later than the species.

Wet places, Me. to Minn.

Type Aroostook Co., Me., *Fernald 191*.

Glyceria septentrionalis, sp. nov.

Culms erect, 1–1.5 m. high, thick and soft; sheaths overlapping, loose, smooth, the upper closed nearly to the summit, ligule 5–6 mm. long, decurrent; blades 1.2–2.5 cm. long, 6–8 mm. wide, nearly smooth, rather obtuse; panicle 2–2.5 dm. long, the subflexuous branches ascending, a spikelet subsessile in each axil; spikelets 8–12-flowered, 1.5–2 cm. long, subsessile or on short pedicels; glumes obtuse, scarious and shining; lemmas 4–4.5 mm. long, faintly 7-nerved, hispidulous, with a shining scarious summit, erose-obtuse, slightly exceeded by the tip of the palea.— In shallow water, N. Eng. to Va. and westw.

Type collected at Guttenberg, N. J. by Wm. M. Van Sickle.

Intermediate between *G. fluitans* (L.) R. Br. and *G. borealis* (Nash) Batchelder, but usually stouter and broader-leaved than either. This has passed as *G. fluitans* (L.) R. Br. but has smaller spikelets and shorter lemmas, and the lemma is hispidulous instead of minutely scabrous. *G. fluitans* occurs along the Gulf of St. Lawrence (Fernald) and near New York City (Nash). Mr. Nash named this form *Panicularia brachyphylla*, noting the difference between that and the common form, but it is identical with *Glyceria fluitans* of Europe.

Bromus latiglumis (Scribn.), comb. nov.

B. ciliatus latiglumis Scribn. 1900. Shear, U. S. Dep. Agric. Div. Agrost. Bul. 23: 40 as syn. under the next.

B. purgans latiglumis Shear. 1900. l. c.

Wooded hills, Pa. to Mont. and Mo.

Bromus incanus (Shear), comb. nov.

B. purgans incanus Shear. 1900. l. c. p. 41.

Wooded hills, Pa. to Va., S. D. and Tex.

Elymus striatus var. **arkansanus** (Scribn. & Ball), comb. nov.

E. arkansanus Scribn. & Ball. 1900. U. S. Dep. Agric. Div. Agrost.

Bul. 24: 45.

Wooded hills, Md. to Ia. and southw.

DEPARTMENT OF AGRICULTURE, Washington, D. C.

SOME MAINE RUBI. THE BLACKBERRIES OF THE KENNEBUNKS AND WELLS,— III.

W. H. BLANCHARD.

IN this concluding paper the *Hispidus* and *Setosus* classes of blackberries are taken up, two new species and one new variety are described, and some of their variations are mentioned under names suggested by the now popular explanations of plant variations.

RUBUS HISPIDUS L. (*R. sempervirens* Bigelow, *R. obovalis* Michx. *R. obovatus* Persoon.) Plants normally perfectly prostrate; stems very slender, small at the base, beset with few to very numerous slender mostly reflexed bristles, some of the smaller generally tipped with small glands; branching freely and tipping vigorously. Leaves on new canes 3-foliate or often in this section 5-foliate, thick, smooth, shining, remaining in favorable places till spring, stipules often large; leaflets broadly obovate with a very short point or none, 1 to 1½ in. long, often 2 in., crenate-dentate, variants often serrate and pointed. Growth on old canes erect, leafy, nearly glabrous; leaves 3-foliate, probably never normally 5-foliate; leaflets thick, broad and rounded; inflorescence slender, more or less racemose; bristles very weak or none, unifoliate leaves few and broad; flowers very variable in size, ⅝ in. to 1 in. broad or sometimes very large; petals generally broad, often very narrow; blossoming and fruiting very late; fruit generally small and sour, but in favorable places often ⅔ in. in diameter and quite edible. Abundant in all parts of this section, dry or moist ground, shade or sun.

The popular impression seems to be that this is a very weak plant